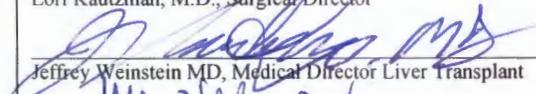
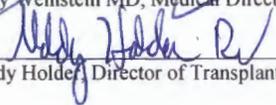


 The Transplant Institute METHODIST DALLAS Methodist Dallas Medical Center	Title: Post-Transplant Hepatocellular Carcinoma Surveillance Protocol	Effective Date: 08/01/2005
	Section: Liver	
Approved by:  Lori Kautzman, M.D., Surgical Director		Revision Date(s): 06/13/2007; 07/26/2019; 04/05/2022 Next review Date: 04/2025
 Jeffrey Weinstein MD, Medical Director Liver Transplant		
 Melody Holder, Director of Transplant Clinical Operations		

Purpose: To ensure timely and uniform post-transplant follow-up of patients with hepatocellular carcinoma

Policy: Patients with hepatocellular carcinoma identified prior to or during liver transplantation will have follow-up imaging/lab studies based on the **Risk Estimation of Tumor Recurrence After Transplant (RETREAT)** score; which incorporates AFP at time of transplant, microvascular invasion, and the sum of the largest viable tumor and number of tumors on explant

Predictor	RETREAT points
AFP level at transplant, ng/mL (use AFP closest to the date of transplant, ideally within 90 days)	
0 – 20	0
21– 99	1
0 – 999	2
> 1000	3
Presence of microvascular invasion	2
Explant largest viable tumor diameter + number of viable tumors	
0	0
1 - 4.9	1
5 - 9.9	2
≥ 10	3

The RETREAT score is obtained by adding the total number of points scored in each of the 3 variables (range 0-8)

RETREAT Score	Surveillance Protocol
0 points	No surveillance
1-3 points	Abd CT/MRI w contrast; chest CT w/o contrast and AFP every 6 months x 2 years
4 points	Abd CT/MRI w contrast; chest CT w/o contrast and AFP every 6 months x 5 years
≥ 5 points	Abd CT/MRI w contrast; chest CT w/o contrast and AFP every 3-4 months x 2 years; then every 6 mo for year 3 - 5

References

Filgueira NA. Hepatocellular carcinoma recurrence after liver transplantation: Risk factors, screening and clinical presentation. *World J Hepatol* 2019; 11(3): 261-272 [PMID: [30967904](#) DOI: [10.4254/wjh.v11.i3.261](#)]

Mehta, N, Dodge, JL, Roberts, JP, Yao, FY. Validation of the prognostic power of the RETREAT score for hepatocellular carcinoma recurrence using the UNOS database. *Am J Transplant*. 2018; 18: 1206–1213. <https://doi.org/10.1111/ajt.14549>